

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 03/05483

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H02J3/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H02J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 310 048 A (TOKYO SHIBAURA ELECTRIC CO) 5 April 1989 (1989-04-05) the whole document	1-10
A	US 6 317 339 B1 (NAKAGAWA MASANORI ET AL) 13 November 2001 (2001-11-13) the whole document	1-10

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

18 March 2004

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26/03/2004

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0310048	A	05-04-1989	JP	1091671 A		11-04-1989
			DE	3887056 D1		24-02-1994
			DE	3887056 T2		05-05-1994
			EP	0310048 A2		05-04-1989
			KR	9103296 B1		25-05-1991
			US	4878208 A		31-10-1989
US 6317339	B1	13-11-2001	JP	2001112262 A		20-04-2001